Notice of Allowability	Application No.	Applicant(s)	
	10/582,103	PERRIN ET AL.	
	Examiner	Art Unit	
	THAI BA TRIEU	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *03/24/2009*.

2. ☒ The allowed claim(s) is/are *11-20*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☒ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *hereto* .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

This Office Action is in response to the Amendment After Final filed on March 24, 2009.

Claims 17-20 were amended.

Applicant's arguments, seepages , filed March 24, 2009, with respect to the rejections of claims 11-14 and 16-20 have been fully considered and are persuasive. The rejections of claims 11-14 and 16-20 have been withdrawn.

Specification

The Amendment to specification submitted on March 24, 2009 has been approved for entry.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Donald M. Hill, Jr. (Reg. No. 40,646) on Wednesday April 22, 2009.

The application has been amended as follows:

In claim 11, line 8, after the recitation of ***"being fixed;"*** the word **-- and –** has been inserted.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

Regarding claim 11, the prior art fails to disclose or renders obvious the claimed combination of a turbocharger having a variable nozzle device having a compressor and an exhaust gas-driven turbine, the turbine comprising a turbine wheel disposed within a turbine housing, the turbine housing receiving exhaust gas from an engine, the turbine having an annular nozzle defined between an inboard wall and an outboard wall for guiding the exhaust gas to the turbine wheel, wherein the annular nozzle comprises a variable nozzle device including:

> *"a plurality of vanes mounted on the inboard wall and extending into the annular nozzle, the inboard wall and the vanes being fixed; and*
> *an axially movable, tube-shaped piston disposed within the turbine housing and having a piston end that forms the outboard wall of the annular nozzle such that the outboard wall is axially movable for varying an axial width of the annular nozzle, the piston end being stepped such that an annular first portion of the piston end extends axially farther toward the inboard wall than does a second portion of the piston end, the piston being axially movable in one direction into a fully closed position in which the first portion of the piston end passes along the radial outside or inside of the vanes and contacts the inboard wall so as to completely close the annular nozzle, and being axially movable in an opposite direction into partially open and fully open positions in which the first portion of the piston end is spaced from the inboard wall."*

Regarding claim 17, the prior art fails to disclose or renders obvious the claimed combination of an engine boosting system having a first turbocharger and a second turbocharger arranged in parallel with respect to an internal combustion engine, wherein the second turbocharger comprises a turbine comprising a turbine wheel disposed within a turbine housing, the turbine

housing receiving exhaust gas from an engine, the turbine having an annular nozzle defined between an inboard wall and an outboard wall for guiding the exhaust gas to the turbine wheel, wherein the annular nozzle comprises a variable nozzle device including:

> *"a plurality of vanes mounted on the inboard wall and extending into the annular nozzle, the inboard wall and the vanes being fixed; and*
> *an axially movable, tube-shaped piston disposed within the turbine housing and having a piston end that forms the outboard wall of the annular nozzle such that the outboard wall is axially movable for varying an axial width of the annular nozzle, the piston end being stepped such that an annular first portion of the piston end extends axially farther toward the inboard wall than does a second portion of the piston end, the piston being axially movable in one direction into a fully closed position in which the first portion of the piston end passes along the radial outside or inside of the vanes and contacts the inboard wall so as to completely close the annular nozzle, and being axially movable in an opposite direction into partially open and fully open positions in which the first portion of the piston end is spaced from the inboard wall."*

Regarding claim 18, the prior art fails to disclose or renders obvious the claimed combination of a diesel engine boosting system having a turbocharger that comprises a turbine comprising a turbine wheel disposed within a turbine housing, the turbine housing receiving exhaust gas from an engine, the turbine having an annular nozzle defined between an inboard wall and an outboard wall for guiding the exhaust gas to the turbine wheel, and an electronic control device operable to close the variable nozzle device of the turbocharger to an optimum position for engine braking by causing a high back pressure upstream of the turbine of the turbocharger; wherein the annular nozzle comprises a variable nozzle device including:

"a plurality of vanes mounted on the inboard wall and extending into the annular nozzle, the inboard wall and the vanes being fixed; and

an axially movable, tube-shaped piston disposed within the turbine housing and having a piston end that forms the outboard wall of the annular nozzle such that the outboard wall is axially movable for varying an axial width of the annular nozzle, the piston end being stepped such that an annular first portion of the piston end extends axially farther toward the inboard wall than does a second portion of the piston end, the piston being axially movable in one direction into a fully closed position in which the first portion of the piston end passes along the radial outside or inside of the vanes and contacts the inboard wall so as to completely close the annular nozzle, and being axially movable in an opposite direction into partially open and fully open positions in which the first portion of the piston end is spaced from the inboard wall."

Regarding claim 19, the prior art fails to disclose or renders obvious the claimed combination of an engine boosting system for an internal combustion engine, having a turbocharger comprising a turbine comprising a turbine wheel disposed within a turbine housing, the turbine housing receiving exhaust gas from an engine, the turbine having an annular nozzle defined between an inboard wall and an outboard wall for guiding the exhaust gas to the turbine wheel, and a catalyst disposed downstream of the turbocharger, wherein the engine boosting system is operable to open the variable nozzle device at a start of the engine so as to cause exhaust gas to bypass the turbine wheel and heat up the catalyst; wherein the annular nozzle comprises a variable nozzle device comprising:

"a plurality of vanes mounted on the inboard wall and extending into the annular nozzle, the inboard wall and the vanes being fixed; and

an axially movable, tube-shaped piston disposed within the turbine housing and having a piston end that forms the outboard wall of the annular nozzle such that the outboard wall is axially movable for varying an axial width of the annular nozzle, the piston end being stepped such that an annular first portion of the piston end extends axially farther toward the inboard wall than does a second portion of the piston end, the piston

being axially movable in one direction into a fully closed position in which the first portion of the piston end passes along the radial outside or inside of the vanes and contacts the inboard wall so as to completely close the annular nozzle, and being axially movable in an opposite direction into partially open and fully open positions in which the first portion of the piston end is spaced from the inboard wall, wherein the turbine housing and the piston are configured such that the fully open position of the piston allows some of the exhaust gas flowing through the annular nozzle to bypass the turbine wheel."

Regarding claim 20, the prior art fails to disclose or renders obvious the claimed combination of a method for operating an internal combustion engine, the method having the steps of providing a first turbocharger and a second turbocharger arranged in parallel with respect to the engine, wherein the second turbocharger comprises a turbine comprising a turbine wheel disposed within a turbine housing, the turbine housing receiving exhaust gas from an engine, the turbine having an annular nozzle defined between an inboard wall and an outboard wall for guiding the exhaust gas to the turbine wheel, completely closing the variable nozzle device of the second turbocharger when the engine is operating below a certain rotational speed, such that only the first turbocharger works to supercharge the engine; opening the variable nozzle device of the second turbocharger when the engine is operating above said certain rotational speed; and including:

"the annular nozzle comprises a variable nozzle device comprising:

a plurality of vanes mounted on the inboard wall and extending into the annular nozzle, the inboard wall and the vanes being fixed; and

an axially movable, tube-shaped piston disposed within the turbine housing and having a piston end that forms the outboard wall of the annular nozzle such that the outboard wall is axially

movable for varying an axial width of the annular nozzle, the piston end being stepped such that an annular first portion of the piston end extends axially farther toward the inboard wall than does a second portion of the piston end, the piston being axially movable in one direction into a fully closed position in which the first portion of the piston end passes along the radial outside or inside of the vanes and contacts the inboard wall so as to completely close the annular nozzle, and being axially movable in an opposite direction into partially open and fully open positions in which the first portion of the piston end is spaced from the inboard wall."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI BA TRIEU whose telephone number is (571)272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
April 22, 2009

/Thai-Ba Trieu/
Primary Examiner
Art Unit 3748